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the Turkey creeping under it. A long train of barley, corn, or some other grain is then laid on the ground, leading into the trap; the Turkeys gather up the grain till they arrive at the trap, when they follow the bait and creep under the rail; as soon as they discover the predicament they are in they become so alarmed that they appear at once to lose all instinct; there is nothing to prevent them leaving the trap the way they came in, but they seem to not be aware of that, and remain stupidly staring about them till they are captured. In consequence of this known stupidity of the Turkey, trapping is prohibited in Canada, as tending to exterminate the breed, the Turkey usually wandering in flocks or families, and the whole flock being thus generally taken at once; whereas, if they are *shot*, the chances are that some one of each brood will escape."

SOME WINTER BIRDS OF OKLAHOMA.

BY WELLS W. COOKE.

LESS has been published about the birds of Oklahoma than about those of any other state in the Union. It seems advisable therefore that a record should be made of the notes made during a seven months' residence there the winter of 1883-4. The center of observations was the town of Caddo, on the M. K. and T. Ry., twenty miles north of Denison, Texas. The country at that time — the Choctaw Nation — was devoted principally to the grazing of beef cattle. Right in the town of Caddo there were a few small cotton and corn fields, but a half mile in any direction brought one to the open range, never as yet overstocked, and scarcely changed from its condition before it was trod by the white man's foot. Much the same could be said about the timber. There were no forests anywhere and no evergreens. The country as a whole was well grassed prairie, but every little 'branch' was fringed with brush, and when enough of these had united to make a permanently flowing stream its banks were lined with a thin fringe of trees, which

widened as the stream enlarged until it became a bottomland of tall fine hardwood timber. Such a bottomland existed six miles south of Caddo along the Blue River and many of the observations here recorded were made in this timbered area. It had never been lumbered and the few enormous black walnut logs that had been marketed — logs so large that twelve yoke of oxen were required to haul a single log — had made no impression on the tract as a whole. In fact the conditions, so far as land birds were concerned, were the same as though the country had never been settled — making it all the more desirable that bird notes made at that time should be published for comparison with conditions as they exist today.

The writer reached Caddo August 27, 1883 and left there April 8, 1884. Although bird observations were a side issue, yet close watch was kept of the ever shifting bird population, several hundred birds were collected for purposes of identification, while a bird diary extending over more than eighty foolscap pages serves as the basis for the following notes.

Migrating birds were present during the first week of September; Barn Swallows and Nighthawks passed each evening and September 10, Tree and Cliff Swallows with Cowbirds were common in migration. Other duties prevented a visit to the heavy timber of the bottomland during the whole of the fall and the notes to the end of November pertain to a strictly prairie country, but it seems probable that September 14–21 was the height of the fall migration of warblers. September 15, first rain, ending a dry spell that had lasted since the middle of June; September 21, first ducks of the season — a flock of Mallards. Scissor-tailed Flycatchers, Swallows, and Nighthawks continued to drift by the last ten days of September and disappeared early in October. Meanwhile Cowbirds and Mourning Doves had gradually increased until by October 10, the former were in flocks of 100–150 birds, and the latter were at least five times their September numbers. On this last date the first flock of Canada Geese appeared and flocks of Flickers began to pass in migration. October 15, first large flock of Meadowlarks, about 150, drifting southeast; October 26, first flock of Horned Larks; November 3, first flock of Robins.

By November 6 the Brewer's Blackbirds and Purple Grackles

which came in late October had increased until they and the Cowbirds were present in multitudes. The first week in November brought the first visitors from the north of the Tree, Song, White-crowned, and Harris's Sparrows, Junco, Myrtle Warbler, and Ruby-crowned Kinglet.

The trees had shed about half their leaves by November 9, the first norther of the season November 13 froze water slightly and stripped off many more, while a real norther November 26 tore off most of the remainder.

The first hard rain of the season, December 3, marked the beginning of the wet season; the 'tanks' were filled for the first time since July, and December 13, the lowlands were half-flooded by a down pour. A norther and everything frozen December 19; a temperature of 74° on December 23 and freezing the next day; real winter from December 24 to January 27, with zero weather on January 5 and + 4° on January 24.

The Longspurs began to arrive November 17 and increased November 26; after the hard freeze of December 19, the most common birds were the Junco, Tree Sparrow, and Brewer's Blackbird. All through December the Cowbirds, Red-winged Blackbirds and Meadowlarks gradually decreased until by Christmas they had ceased to be conspicuous. The lowest ebb of bird life was December 24-January 15; after that date, in spite of the cold, Blackbirds began to increase until by January 20, both they and the Horned Larks had doubled in numbers.

McCown's Longspur came January 19; the first spring song of the Meadowlark was heard January 21; still further increase of Blackbirds on January 23, followed by Cowbirds two days later. First spring songs of Red-winged Blackbird and Song Sparrow January 29, when spring began with a rush, the temperature rose to 72° and in two days more there was no snow, ice, or frost anywhere. On January 31 there was a fine chorus of song from a dozen different species, while the Mallard and Green-winged Teal returned to the tanks and a few flocks of ducks passed north. Within the next few days the grass started and the Spring Beauty opened its blossoms.

February 6-14, a second winter.

Savannah Sparrows, Horned Larks, and Smith's Longspurs were

abundant February 13, and the next day appeared a flock of not less than a thousand Lapland Longspurs. Innumerable Savannah Sparrows were present February 16, with the first Chestnut-collared Longspurs and Le Conte's Sparrows. By February 18, the latter were present in hundreds, while the Longspurs, Savannah Sparrows and Horned Larks showed a decrease. The remainder of the Longspurs and Horned Larks with all the Le Conte's Sparrows left the night of February 19, with the Red-winged Blackbirds and Savannah Sparrows showing much decrease.

The woodland birds on February 23, showed not much change from their November condition, except an increase of Field, Song, and Fox Sparrows. On February 26, Robins, Red-winged Blackbirds, Brewer's Blackbirds and Cowbirds were common in migration and a flock of Sandhill Cranes went north at an immense height.

Real spring began March 5, with a maximum temperature of 79°, the arrival of the Purple Martin, and with a 'cloud' of Red-winged Blackbirds. The bulk of Juncos and Harris's Sparrows departed the night of March 9, but were replaced March 15 by large flocks of Fox, Harris's, and Savannah Sparrows and Brewer Blackbirds.

The least bird life since February 1 was on February 22, though at this date Savannah Sparrows were very abundant, but left in the next 48 hours. In the woods on March 25 Ruby-crowned Kinglets and Blue-gray Gnatcatchers were common. At the end of the next ten days a few Savannah and Lincoln's Sparrows were about all that were left of the winter visitants. During these days there occurred the principal migration of Shorebirds, Greater Yellowlegs and Upland Plover being especially abundant, while vast numbers of Sandhill Cranes passed north during the day.

I left Caddo April 8 and made no bird notes after April 4, at which date the migration of warblers and of the more common summer birds had scarcely begun.

1. **Podilymbus podiceps.** PIED-BILLED GREBE.—Not rare as a migrant, spring and fall; one September 22, 1883; most likely to be found on the 'tanks' which were so small and shallow that the birds had scant chance to use their powers of diving and long distance sub-surface swimming.

2. **Anas platyrhynchos.** MALLARD.—One of the few ducks which remained through most of the winter. It was seen September 21, being

the first duck of any kind to arrive in fall migration on the tanks. Ducks were never common owing to the entire lack of marshes and permanent water. When everything froze in January all ducks were forced to leave the open prairies, but mallards were found along the Blue, January 12 and they returned to the tanks January 31, at which time a few flocks of ducks began to pass in northward migration.

3. **Chaulelasmus streperus.** GADWALL.—A few flocks were noted in the spring migration from February 19 to April 2.

4. **Mareca americana.** WIDGEON.—The first flocks in spring were seen February 19.

5. **Nettion carolinense.** GREEN-WINGED TEAL.—The hardiest duck next to the Mallard. It was seen in the fall October 6, and remained in small flocks until all the ponds froze in January. It returned in a few days and had already become fairly common moving northward by January 31. A flock was seen April 2.

6. **Chen hyperboreus hyperboreus.** SNOW GOOSE.—Probably no Snow Geese wintered near Caddo, for they were not seen until spring migration was well under way. Then on March 10, two large flocks were seen flying north and they immediately became common, five large flocks being seen in the afternoon of the same day.

7. **Branta canadensis canadensis.** CANADA GOOSE.—The first goose was seen in fall migration October 10, and for the rest of the fall the species was common flying over toward the south. None alighted near Caddo, but some must have wintered not far off for they were seen every few days all winter. The winter of 1881-2, geese were extraordinarily abundant near Caddo and hundreds were shot for their feathers, the bodies being thrown away. The next winter they were rare and the same during the winter of 1883-4. But this latter winter they were numerous a hundred miles west of Caddo. Canada Geese were common March 3, 1884, migrating north against a strong wind, and flocks passed daily March 9-16. A hard thunderstorm broke at 11 P. M. April 1, and a flock of geese overtaken by the storm, alighted in a dooryard at the edge of town. Hunters say that this is later than usual for them to be present.

8. **Ardea herodias herodias.** GREAT BLUE HERON.—Three were seen February 11, but they probably had not wintered in the immediate vicinity as they are reported to remain only in the mildest winters and that of 1883-4 was anything but mild. Not seen again until the regular spring migration began on March 18.

9. **Grus mexicana.** SANDHILL CRANE.—Naturally a bird of the open country, the sandhill crane was a common migrant both spring and fall at Caddo. The first, a flock of five, passed over November 6, followed on November 11 by three large flocks that flew over southward with much noise in the middle of the day. This was only two days before the first norther of the season carried the temperature below freezing and brought down many leaves. The cranes did not return until February 26, when a flock of sixteen went slowly north in the late afternoon at an immense

height. Several flocks passed March 3, 16, and 22, and vast numbers dotted the prairies and passed north in large flocks April 1-4.

10. ***Rallus elegans***. KING RAIL.—A single bird shot November 1 constituted the only record for this species, which could find scant accommodations to its liking around Caddo.

11. ***Gallinago delicata***. WILSON'S SNIPE.—Never common; a few scattered birds were seen from October 16 to November 6; the first spring migrants appeared March 8; and they were present in some numbers March 12.

12. ***Totanus melanoleucus***. GREATER YELLOW-LEGS.—Seen in small numbers March 11 and March 25, and they became common April 4.

13. ***Actitis macularia***. SPOTTED SANDPIPER.—There was no suitable country to tempt the migrant Spotted Sandpipers to alight and they were found only a few times in small numbers, October 1-16.

14. ***Charadrius dominicus dominicus***. GOLDEN PLOVER.—Not nearly so common as was to have been expected; a few were reported March 12 and a single one seen March 25.

15. ***Oxyechus vociferus***. KILLDEER.—The killdeer of course nested near Caddo and was easily the most conspicuous member of its family. It was noted all the fall, but was most common October 1, after which time the numbers became gradually less until by November 6 nearly all were gone; the last was November 9. A single one was seen February 22, but not many appeared until a week later. By March 5 they had become common and noisy and were most numerous March 15.

16. ***Colinus virginianus virginianus***. BOB-WHITE.—Abundant resident; favorable conditions for both food and shelter existed along every little branch and the number of covies was correspondingly great. No better quail hunting could be found anywhere than existed the early winter of 1883 along the edges of the bottomland of the Blue River. The Red-tailed Hawks however seemed to be fully as destructive to the quail as the sportsmen and by Christmas the covies had become seriously reduced.

17. ***Tympanuchus americanus americanus***. PRAIRIE CHICKEN.—The open country around Caddo was especially adapted to the needs of the prairie chicken and they were one of the common birds. Some 18-20 covies were reared within a radius of a mile of the town and by September 24, these had begun to unite into larger flocks. At least a hundred were seen in one small field November 6. In the early fall while they were in the original covies, they would lie well to a dog and gave good sport. As the flocks became larger the birds became much more wary until by early December it was difficult to get within even rifle shot. Each flock had sentinels posted on commanding elevations, and when these gave the alarm the whole flock was off and seldom flew less than half a mile before alighting.

18. ***Meleagris gallopavo silvestris***. WILD TURKEY.—Very common in the bottomlands a few miles from Caddo. On November 5, twelve large ones were brought into town as the spoils of a forenoon hunt by one party.

19. **Zenaidura macroura marginella.** WESTERN MOURNING DOVE.—In the late summer and early fall, the mourning dove occurred everywhere in single birds and pairs. By September 10, they had begun to gather in small parties, and soon after this it was evident that their numbers were being increased by arrivals from the north; from September 28 to October 9 they were at least five times as numerous as the summer population. During the dry spell from September 10 to October 1, they visited the tanks in large numbers every evening, but as soon as the rains came they spent the nights on the tops of the hills. By the first of November all the large flocks had gone and only a few scattered birds remained. The last one seen was November 29, but they were reported occasionally throughout the winter and returned in spring migration February 23, though in the spring they were far less common than in the fall.

20. **Cathartes aura septentrionalis.** TURKEY VULTURE.—An abundant summer resident and equally common throughout the winter. In fact this species and the Black Vulture were so numerous that in the fall and early winter when cattle feed was good and dead animals were few, these two species had hard work to get a living. They could be seen sailing overhead in great flocks seeking for food, or sitting in long lines on the fences. An animal killed in the morning would be picked clean by night and there was great quarreling with some fighting over the carcass. After the snows and freezing rains came cattle began to die by the hundred, and before spring more than 15,000 died within 30 miles of Caddo. Then, particularly in March, scarcely a Vulture was ever seen in the air. They became so particular that they would not touch a carcass on the prairie, but selecting those that had fallen in or near timber, would gorge themselves, fly heavily to the nearest tree and stay there until there was room in their bodies for more of their disgusting food.

There seemed to be considerable increase in the numbers of the Turkey Vulture during October, especially October 18–20, and probably this is the time that migrants from the north arrived.

21. **Catharista urubu.** BLACK VULTURE.—Common resident and though varying in numbers from week to week, this variation is probably due to wanderings in search of food rather than to any real migration. Its numbers were on the whole somewhat less than those of the Turkey Vulture; usually both species flocked together, but on January 16 a flock of 27 was seen composed entirely of Black Vultures.

22. **Elanoides forficatus.** SWALLOW-TAILED KITE.—Common both in migration and in summer. The first arrived in the spring April 1.

23. **Circus hudsonius.** MARSH HAWK.—The most common winter hawk, indeed they were twice as numerous at Caddo during the winter of 1883–4 as all other hawks combined, and were in the proportion of about three brown-colored to one blue individual. In the spring they fed largely on Blackbirds. They were seen many times to try to catch smaller birds, but always failed.

24. **Accipiter velox.** SHARP-SHINNED HAWK.—A not rare winter resident; seen January 12 at the Blue River.

25. **Accipiter cooperi.** COOPER'S HAWK.— A winter resident, seen for the first time in the fall on September 17.

26. **Buteo borealis borealis.** RED-TAILED HAWK.— A common winter resident; as many as eighteen were seen Christmas day near the Blue River.

27. **Haliaeetus leucocephalus.** BALD EAGLE.— A winter resident along the Blue River; seen there January 12.

28. **Falco sparverius sparverius.** SPARROW HAWK.— One of the commoner hawks through the winter and probably a resident. It was seen September 22 and by March 3 most of the wintering birds had departed and only three individuals were seen from then to March 15. On November 7 a Sparrow Hawk was seen chasing a Shrike—dog eat dog.

29. **Strix varia varia.** BARRED OWL.— Resident and the commonest owl or at least the one most in evidence. The pellets thrown up at one time by an individual of this species contained parts of a Brewer Blackbird, a Cardinal Grosbeak and a Le Conte Sparrow.

30. **Otus asio asio.** SCREECH OWL.— A common resident.

31. **Speotyto cunicularia hypogaea.** BURROWING OWL.— Does not occur right at Caddo, but is a common resident thirty miles to the northwest.

32. **Conuropsis carolinensis.** CAROLINA PAROQUET.— According to the early naturalists, this species was formerly abundant throughout much of eastern Oklahoma. A sharp lookout was kept for it every time that the timbered districts were visited, but none was seen. A stuffed one was still preserved that had been shot near Caddo several years previous. In 1882 a large flock was seen about 18 miles from Caddo; other smaller flocks were reported from time to time, the last being January 15, 1884 on the Blue River about eight miles from Caddo. They were, of course, resident.

33. **Ceryle alcyon alcyon.** KINGFISHER.— Resident, though not so common as in many other parts of the country.

34. **Campephilus principalis.** IVORY-BILLED WOODPECKER.— Resident and not considered by the local hunters as any great rarity. Seen on two visits to the heavy timber of the Blue River — November 29 and January 12.

35. **Dryobates villosus villosus.** HAIRY WOODPECKER.— Common resident.

36. **Dryobates pubescens pubescens.** DOWNY WOODPECKER.— Common resident; these two woodpeckers were about medium in numbers as compared with the other species, exceeding the Yellow-bellied and Red-headed, and being exceeded by the Flicker and the Red-bellied Woodpecker. On January 12 about a dozen were seen in two miles along the Blue River; they were already beginning their spring drumming.

37. **Sphyrapicus varius varius.** YELLOW-BELLIED SAPSUCKER.— Rare winter resident; seldom more than one seen in a day's tramp. It was not seen in the fringes of timber along the branches, but was found every time the heavy timber of the Blue was visited.

38. **Phloeotomus pileatus pileatus.** PILEATED WOODPECKER.— In the larger forested areas of the river bottoms, a fairly common resident.

39. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER.— A winter resident and one of the rarest Woodpeckers. A party of eleven flew over town September 12, evidently in migration, and two more passed by September 18, flying at a great height. A very few were present all winter in the timber along the Blue.

40. **Centurus carolinus.** RED-BELLIED WOODPECKER.— Resident and the most abundant Woodpecker near Caddo; some 50-60 were seen November 29 in a three-mile walk along the Blue River.

41. **Colaptes auratus auratus.** FLICKER.— None were seen until migrants began to appear September 18, but it does not follow that the species could not have been found earlier had the heavy timber been visited. No more migrants seen until October 14 when they became common. Through the winter along the Blue they were next to the Red-bellied in numbers, being most common the last of November and less than half as common in the middle of the winter. They were still present in fair numbers March 15, but by March 25 had nearly all departed.

42. **Colaptes cafer collaris.** RED-SHAFTED FLICKER.— A fine male was collected January 11, being the first one seen. None of the local hunters to whom it was shown had ever before seen a Flicker with red wings, so it evidently is an uncommon visitant to the district. The next day it was found fairly common near the Blue and when this form and *auratus* were heard calling alternately as happened several times during the day, the note of *collaris* was so much coarser, rougher, and heavier as to be instantly distinguishable. The so-called *hybridus* was also noted at the same time and place and both forms remained common the rest of the winter.

Thus at Caddo, *auratus* arrived early in the fall and was a common winter resident; few, if any, bred there. After *auratus* had practically completed its fall migration and settled down to winter numbers, *collaris* and *hybridus* came in together, and during the coldest weather all three were found in about equal numbers in heavy timberland, though *collaris* was perhaps the most abundant. All three forms were still present March 15, but *collaris* and *hybridus* left a few days later.

43. **Chordeiles virginianus** subsp.? NIGHTHAWK.— A few were already present the first of September but whether or not they were summer residents could not be told. By September 9 southward migration was well started; an increase was noticeable September 18 when they were most common. Their numbers slowly decreased and the last was seen October 10.

44. **Archilochus colubris.** RUBRY-THROATED HUMMINGBIRD.— Seen only twice, one bird each day, October 7 and 8.

45. **Muscivora forficata.** SCISSOR-TAILED FLYCATCHER.— A common breeder, scattered over much of the country; gathering in flocks September 11; moving southward in the early evening September 14; the

height of fall migration was September 20-22, the flocks seeming to start for their night's journey, just before dark. The morning of October 6 a flock was seen which had arrived during the previous night; they were very restless, were not feeding, left during the day, and were the last seen. The next spring they appeared at Caddo, April 11.

46. **Tyrannus tyrannus.** KINGBIRD.—Though of course the Kingbird must nest in that general region, none were seen until September 10 and then only three birds. Two more were seen the next day and four on September 14. This completes the record for the whole fall.

47. **Sayornis phoebe.** PHOEBE.—A rare migrant and still rarer winter resident. None were seen until three birds in migration October 18, paused for a few minutes in town and then hurried on southward. No more were seen in town but a few spent the winter in the heavy timber whence they appeared March 8, March 15, and again March 25.

48. **Otocoris alpestris praticola.** PRAIRIE HORNED LARK.—The appearance of a large flock October 26, marked the arrival of this species in its winter quarters. They soon became common and remained in fairly constant numbers until the real winter of January when they doubled their former numbers. When the earth was covered February 13 with a half inch of fine frozen sleet, the Horned Larks seemed to be having a hard time to get a living. The air was full of swiftly flying flocks that alighting only to start again before the last straggler had fairly touched the ground. A decided decrease was noticeable February 18 and two days later not a bird was visible in the fields where they have been common all winter. Others in less numbers soon came to take their places and about March 8 the flocks broke up and the few remaining birds were seen in pairs.

49. **Cyanocitta cristata cristata.** BLUE JAY.—None were seen until on October 18, a flock of 18 passed over flying south; seen again October 25. No more were noted until the timber along the Blue River was visited November 29; there they were found abundant, in fact they were everywhere and kept up a constant shower of acorns falling on the dry leaves. At least 150 seen in a three mile walk. At one time when passing through a grove of trees which had no acorns not a Jay was visible. Some of the heavier woods near the smaller streams were visited December 25, and no Blue Jays were seen. The part of the woods where they were most abundant on November 29, was visited again January 12, and less than a dozen were seen and scarcely a sound heard. The same conditions were found on a subsequent visit February 23, and much the same when another similar stretch of bottomland was visited March 25.

50. **Corvus brachyrhynchos brachyrhynchos.** CROW.—In early September, the Crows were scattered singly over the country and probably represented the birds that had spent the summer in the vicinity. By September 22, they began to show a decided increase, and then remained constant in numbers for the next month; after that, they decreased until during the coldest part of the winter only a few were seen.

51. **Molothrus ater ater.** COWBIRD.—Already common by Septem-

ber 1, in flocks containing both males and females; from September 26, to October 9, these flocks increased in size until they contained 100-150 birds in a flock. The increase continued for the next month until by November 2, they were present in multitudes swarming over the cornfields and around the barnyards. Then they decreased rapidly and only a few were seen after November 15. These few remained through the winter and on January 6 seemed to be nearly through with the winter molt. The first male in full spring plumage was seen January 17 and two days later there was a marked increase in numbers, about half the birds being in bright black plumage.

The bulk of male cowbirds began to arrive about January 22 and they were common for a month and then about February 20, they seemed to pass on north and after a few days their places were taken by new flocks from the south composed mostly of females. They were never common in the spring as in the fall and their spring numbers at the most formed only a small fraction of the mixed Blackbird flocks. Few were seen after the first of March, and a single one March 23 was the last.

52. *Agelaius phoeniceus* subsp.? RED-WINGED BLACKBIRD.—The first flock appeared September 10, the species was not yet common by October 9, and even by November 6, not more than ten flocks had been seen in all. Two days later they became more common and by November 16 they were abundant and equal in number to the Brewer's Blackbird. These mixed flocks gradually decreased until by December 25 there were few flocks of more than a hundred birds. Yet these small flocks were scattered so numerous over the country as to make the Blackbirds among the most numerous species. The last of December the females of the Red-winged Blackbird were hardly a tenth as numerous as the males. On January 22 the first increase over winter numbers was noted; still further increase January 29 and the first spring song. Several flocks were passing north in migration February 16, and by February 20 quite a share of the birds had passed on north. More flocks flew by heading north February 25, still principally males, though a few females were seen February 26 and about a tenth of the flocks on this date were young males. On March 1 it was noticed that the local flocks feeding around town during the day, were flying to the woods for the night. Nothing of the kind was seen during the whole of the winter, the birds keeping all the time in the open country away from the timber. A cloud of Red-winged Blackbirds was seen for the first time in the spring March 5, and on March 11 a similar cloud passed by at noon as though in regular migration. Within a few days they began to decrease and by March 20 had become so rare that for the rest of the month only small parties of 6-10 were seen.

53. *Sturnella magna magna*. MEADOWLARK.—Though probably resident, they cannot have been common in the fall for they were not noted among the large numbers of Western Meadowlarks that swarmed over the country in the fall. It was not until January 11 that this form was certainly identified; by January 31 it was in full song and the songs of the eastern

and western forms could often be heard in the same field. It was fairly common in migration February 16, but was never common as *neglecta* was in the fall, and the migrants passed on north in the course of the next ten days. A few additional individuals on March 8, were the last ones certainly identified.

54. ***Sturnella neglecta***. WESTERN MEADOWLARK.—A resident, but much less common in summer than in migration. It began to flock in the early fall and by September 22, these flocks contained 15–20 individuals; the size of the flocks increased until on October 15 a flock of about 150 was seen; a little later the birds were most numerous in flocks of 200–500. Then they rapidly decreased, until by Christmas only a few small parties of 3–6 remained sitting on the fences, silent and disconsolate as if debating whether to continue south or to stay. The first spring song was heard January 21 but there was not much increase in numbers until about the middle of February. These migrants soon passed north leaving few breeders remaining for the summer.

55. ***Euphagus cyanocephalus***. BREWER'S BLACKBIRD.—Nearly all the time this was the most abundant Blackbird. That it sometimes nested there was proved by the fact that in early September a scarcely fledged bird was caught that must have been reared in the immediate vicinity. The first flocks came about October 20 and increased so rapidly that by November 6–8 when they were most numerous they swarmed everywhere. Then they gradually decreased until by November 26 they were less than one-third of their highest numbers, but even at this they were as numerous as any other species, not excepting the Juncos and Tree Sparrows. By Christmas the flocks had become still smaller, many small parties of 6–10, were then seen and few flocks of over a hundred birds. The spring 'song' was first heard January 9 and the male that uttered it was also going through the regular feather ruffling and swelling of the mating season. Females at this time were rather scarce and even as late as February 26, when the winter numbers had been somewhat increased by migrants the flocks were still at least three-fourths males. Additional migrants came early in March and by March 15, the Brewer's Blackbird was the most numerous it became any time in the spring. Nearly all left during the next week, and the remainder began to pair.

56. ***Quiscalus quiscula æneus***. BRONZED GRACKLE.—Became common October 20, and increased slightly to November 8; then decreased so rapidly that all were gone in the next four days. When most common they were not one-tenth as numerous as Brewer's Blackbird. None seen at any time through the winter, which is rather strange, considering how much farther north this species winters nearer the Mississippi.

57. ***Carpodacus purpureus purpureus***. PURPLE FINCH.—A party of about 15, on January 12, were the first seen except a few two days previously; two were adult males in full breeding plumage, but no song was heard from any of them. They never became common, but remained through the rest of the winter until March 18, and were in full song by March 15.

58. **Astragalinus tristis tristis.** GOLDFINCH.— A common winter resident, seen after November 12 in small parties of 6-25 birds. They remained fairly constant in numbers through the winter, the last being seen March 25.

59. **Calcarius lapponicus lapponicus.** LAPLAND LONGSPUR.— None were seen until a sudden cold snap in February covered everything with frozen rain; then on February 13, three were seen; the next day they were present by hundreds if not by thousands. They swarmed everywhere for a week and then on the night of February 19, with a clear sky and a south wind, they disappeared as suddenly as they had come.

60. **Calcarius pictus.** SMITH'S LONGSPUR.— Came November 17, when there was hardly a sign of approaching winter and the leaves had not all fallen from the trees. They became common November 26, when the second norther of the season brought many birds from the north, and they stayed through heat and cold, ice, snow, and rain, until the bulk left February 19 and the last February 26. They did not increase in numbers the second week in February, when the Lapland Longspurs became so abundant, but they were still common on February 19 and the next day not one was to be found. The only birds seen after this date were a few flying north on February 26.

61. **Calcarius ornatus.** CHESTNUT-COLLARED LONGSPUR.— Among the hundreds of Lapland Longspurs that came in February were a few of the Chestnut-collared. The first were seen February 16, less than a dozen in all and they remained only a few days; they were seen again February 18, but on February 20 could not be found nor were they seen again later.

62. **Rhynchophanes mccowni.** MCCOWN'S LONGSPUR. Seen only once, when a flock of 40-50 birds was found February 19.

63. **Poecetes gramineus gramineus.** VESPER SPARROW.— First identified with certainty in the fall on October 14; flocks were present the rest of the month, but these soon passed on and the few stragglers left disappeared soon after November 9. None were seen through the winter until a spring migrant — a single bird — arrived February 25. No more were seen until March 11, when they became at once common and remained so until March 19; still present March 25, but in greatly decreased numbers.

64. **Passerculus sandwichensis alaudinus.** WESTERN SAVANNAH SPARROW.— Was already common September 7, and remained so throughout the winter, but was much less numerous during the coldest weather than either fall or spring. A decided increase was noted on February 13, and the next day the birds were common, scattered in parties of five or less all over the fields; two days later their numbers still further increased, only to decrease in another two days and to diminish by at least one half in two days more. They became rather uncommon the last week in February, but were common again March 3 and abundant by March 11. On March 21 the Savannah Sparrows outnumbered in the open fields all other species combined, and were still more common the next day, when in a single field there were certainly not less than a thousand, and probably over two

thousand, individuals. They could be seen and heard on all sides all the time. The next day the numbers remained the same, while the day following a walk over the same ground revealed two birds only. A few were still present when the observations ceased April 4.

65. ***Ammodramus savannarum bimaculatus***. WESTERN GRASS-HOPPER SPARROW.— Though of course it had been present long before, it was not identified until October 29, and was common November 5. It left soon after, and was so rare through the winter that the total record was two birds December 25, one February 9, one a week later, and one March 1. The first spring migrants arrived March 3.

66. ***Passerherbulus lecontei***. LECONTE'S SPARROW.— Though undoubtedly wintering not far distant, it was not seen at Caddo, until a dozen or more were noted February 16. Two days later it was abundant in all the open fields, most of these birds leaving the night of February 19; two individuals on February 26, were the last seen.

67. ***Chondestes grammacus strigatus***. WESTERN LARK SPARROW.— Was common September 1, scattered singly over the fields and roads and had evidently been there all summer. It left by September 10, and had not yet returned when the observations closed the first of April.

68. ***Zonotrichia querula***. HARRIS'S SPARROW.— The first seen were two in town November 8, one with black head and throat patch, the other with no black feathers. Several were seen November 16 and a small party November 26. In the bottomland along the Blue River November 29, not a one was seen, but in the bushes fringing the smaller streams, they gradually became more common until by Christmas they had become the most common species. They were in small parties scattered along the branches and would keep flying ahead of a person until several of these parties had united to make a flock of 40–50 birds. On December 25, about one male in a dozen showed the black head and jet black throat, while half of the rest began to show black feathers among the brownish ones of the throat and breast.

They were least numerous from about January 15 to February 23. Up to February 18, no real black-headed bird had been seen in the spring, though all were showing black feathers on the crown. By March 1 some of the males were in full plumage. By February 26 they had become common again in their northward migration showing that many winter to the south of Caddo. These returning birds spread over the country more than did the winter residents and on March 5 a large party was seen feeding on the ground in a barn yard on the prairie.

On January 3, they began to appear in town, and on January 7 when some bird seed was thrown out near the house, a party of some 20 Harris's Sparrows almost monopolized the free lunch. Harris's Sparrow had two notes, one a clear whistle something like that of the White-throat, and the other a queer chuckle, while a few days later a third note was distinguished like one trying to say 'chink' and 'peep' at the same time.

By the middle of January the three *Zonotrichias* had settled into their

regular numbers; the White-crowned was the least common and was found almost entirely in weed patches in town and on the edges of the prairies; the Harris's Sparrow came next in numbers and most of them kept in the thickets along the small streams, a few coming into town and still fewer into the heavy timber; the White-throated, the most common of all, kept strictly to the bottomlands.

The Harris's Sparrows remained abundant all winter and on February 23 a few were found in the heavy timber, though still keeping for the most part to the borders of the woods.

The bulk of the winter residents departed the night of March 9, but their places were taken immediately by migrants from the south in such numbers as to make the species on March 15 more common than it had been any time through the winter. But they left as quickly as they had come, and a single bird seen March 25 was the last.

69. **Zonotrichia leucophrys leucophrys.** WHITE-CROWNED SPARROW.—A single male in full dress November 9 was the first noted. The numbers increased gradually until by November 29 the species was common along the brushy streams near Caddo, but on that day was found in small numbers only, in the heavy timber along the Blue. A norther on December 19, froze everything solid and brought an increase of White-crowns, but these continued south soon afterwards and by December 25 the species was rare. It remained so the rest of the winter; it was present all the time but seldom more than two or three seen in one day. There was no increase of numbers as spring opened and the last was noted on March 11.

70. **Zonotrichia albicollis.** WHITE-THROATED SPARROW.—This was one of the most abundant birds in the woods throughout the winter. It was not noted near Caddo during November, but when the heavy timber was visited for the first time on November 29 it was found to be the most common bird there, and evidently must have come several days earlier. It was scattered through the woods in parties of 10-25 birds, most of the flocks being of the former size; several hundred birds in all were seen. Though the numbers decreased somewhat during December and January, yet it continued to be the most common sparrow in the woods through the whole winter and to February 23. During all this time not one was seen in town, where all the other sparrows came frequently, but on March 5 its clear spring song was heard in the village. By this time the bulk had left, and on March 25 the last one was noted.

71. **Spizella monticola monticola.** TREE SPARROW.—The first were noted October 31, but they had probably arrived with cold snap of a few days previous. They had increased by November 6 and after the norther of December 19, they became one of the commonest birds. In the fields and along the edges of the woods they were more common even than the Junco, but in the heavy timber they were outnumbered by the White-throated Sparrow. By throwing some bird seed on the south porch of my house January 7, we had a whole colony of sparrows in plain sight right under the window. A party of some twenty Harris's Sparrows almost

monopolized the free lunch, but one bright Cardinal came occasionally, with a few White-crowns in plain brown head-gear, while the still more humble Tree Sparrow made up for its lack of beauty, by keeping steadily at work and devouring more seeds to the minute than any of the others.

The numbers of the Tree Sparrow remained unchanged through the rest of January and to February 26. They seemed to have decreased by March 1, and the bulk probably left the night of March 9; by March 11, only a few were left and none were seen after this date.

72. **Spizella passerina passerina.** CHIPPING SPARROW.—Should be a breeding bird at Caddo, but none were noted until late in October, and even by November 6 not many had been seen. The species never was common, and although a few were seen in December and January it was a decidedly rare bird through the winter. Spring arrivals had not yet been noted the first of April.

73. **Spizella pusilla pusilla.** FIELD SPARROW.—Seems not to breed at Caddo for none were seen there until several appeared on October 6, from which time they increased slowly for the next month, until they became fairly common and then remained so throughout the entire winter. With the opening of spring February 20–23, migrants from the south caused a notable increase, but these passed on almost immediately taking with them the winter visitors and before March 25 all had left.

74. **Junco aikeni.** WHITE-WINGED JUNCO.—On February 21 one was shot in my yard in town which was a perfectly typical specimen of this form in its highest and brightest plumage. It was in company with a second, and had been seen several times previously since its first appearance February 14. A single one seen March 7 completed the winter's record.

75. **Junco hyemalis hyemalis.** SLATE-COLORED JUNCO.—A single bird appeared October 25, but no more were seen until a small party came November 7, followed November 16 by a further increase. They became common November 26 after the second real norther of the season. After the next norther December 19, that froze everything solid, the Junco became one of the commonest birds of the prairie. It was still common December 25, but much less than the previous week and it soon still further decreased until, during January and February, while not exactly rare, yet it was far from common and remained so until its ranks were swelled by spring arrivals February 23. The largest flocks of the whole season were seen March 1, the bulk of these birds departed the night of March 9, and most of the remained followed the succeeding night. So completely did they leave that on March 19 only a single bird was seen and another one March 26 was the last.

76. **Melospiza melodia melodia.** SONG SPARROW.—Not only did it not breed at Caddo, but it was not seen there until late — November 6. It would have been expected much earlier, but so conspicuous a bird could hardly have been overlooked. Two days later it had become fairly common, and on November 29 it was one of the common birds found in the heavy timber along the Blue. It was less numerous there a month later,

but still remained all winter among the more common birds. The first full song was heard January 29, and two days later it was a prominent member of a bird chorus from a dozen different species which was as voluminous as one would expect in the height of spring migration. Arrivals from the south were much in evidence March 11 and as in the case of several other of the winter residents, the spring birds passed on within the next few days and took the winter birds with them. No Song Sparrows were seen after the few scattering individuals present March 21.

77. **Melospiza lincolni.** LINCOLN'S SPARROW.—Not noted in fall migration; a single bird seen February 1 and as spring migration had not yet started it had undoubtedly wintered. One was collected February 9, but up to and including March 11, only seven birds had been seen, showing how rare it is during the winter. Then suddenly on March 15, it became common both in town and in the woods, only to leave for the most part in a few days. When the record closed on April 4, it was present in about one-third of its highest numbers.

78. **Passerella iliaca iliaca.** FOX SPARROW.—Not an abundant winter bird but still fairly common, and almost constant in numbers from the latter part of December until spring migrants began to arrive February 23. The first fall arrival was noted December 1 and the last March 15, on which day migrants were abundant only to disappear at once.

79. **Pipilo erythrophthalmus erythrophthalmus.** TOWHEE.—The first was noted October 24, and the species did not become common before the middle of November, but by November 29 it was present in full numbers scattered commonly through the woods along the Blue River, for the most part in pairs of a male and a female, many of the males being as brilliant in dress as ever seen in spring. The numbers decreased by half as the migrants passed on, and left the species rather common through the winter until the migrants returned March 8. The increase of numbers was of short duration, and a long walk on March 15 revealed only three birds while the last was seen March 25.

80. **Cardinalis cardinalis cardinalis.** CARDINAL.—Abundant resident. During the fall, cardinals were found among the thick tall weed patches around the cotton fields; they were silent and so shy that they were seldom seen, sheltering themselves in the almost impenetrable mass of foliage. During the latter part of November, when most of the leaves had fallen, they retreated to the thickets along the streams. Here they stayed in great numbers until real winter when they began to flock into town, and as long as snow lasted they could be found everywhere around the houses where not one had been seen for several months. A dozen Cardinals together, with the snow for a background, made a most striking and brilliant picture.

81. **Passerina ciris.** PAINTED BUNTING.—An abundant breeder at Caddo, but all had left before this record began the last of August and none had as yet returned the first of April.

82. **Spiza americana.** DICKCISEL.—Quite common September 14,

but none seen later than September 25, and they had not yet arrived the first of April.

83. ***Progne subis subis***. PURPLE MARTIN.— Fall migrants had for the most part departed before the last of August, but a few were present the first week in September and the last left September 12. A party of five arrived the afternoon of March 5, but disappeared in a few minutes and did not return until March 11. They were still far from common March 19 and had received no further increase by April 4: evidently not a common bird at any time.

84. ***Petrochelidon lunifrons lunifrons***. CLIFF SWALLOW.— During the evenings of the last of August and early September, swallows were in sight almost continuously moving southward. In August the Barn Swallow was the most numerous, later its numbers decreased and the Cliff Swallow became most common. In late August the flight began about 5.30 and lasted an hour; on September 13, the first group passed at 5.10 and the last at 6.10. In addition on September 10, probably a hundred Cliff Swallows were seen during the day circling over the town. At 8 A. M. September 25, about thirty Cliff Swallows passed in one flock going rapidly south; and for the next two weeks Cliff Swallows were seen about one third of the mornings and one half of the evenings, in numbers from five birds to 200, about nine-tenths of them heading straight south and the rest flying about in search of food. The last was seen October 9, and none had appeared the next spring by April 7.

85. ***Hirundo erythrogastra***. BARN SWALLOW.— For several evenings the last of August, many barn swallows passed flying westward, probably to spend the night at a lake not many miles distant. Their numbers steadily diminished until by September 13 the Barn and Cliff Swallows were about equally numerous. Three Barn Swallows on September 19 were the last of this species seen, nor had they been seen again by the seventh of April, though on April 1, they appeared at Gainesville, Tex., only a few miles to the southward.

86. ***Iridoprocne bicolor***. TREE SWALLOW.— Never common, but a few were seen daily mingling with the flocks of the other swallows, until the last was noted September 13. It also had not appeared by the first of April, though by this time it was already present as far north as Chicago.

87. ***Bombycilla cedrorum***. CEDAR WAXWING.— The first birds, a flock of about a dozen, were seen November 29. A few remained through the winter, but they were quite rare and showed no increase in the spring.

88. ***Lanius ludovicianus excubitorides***. WHITE-RUMPED SHRIKE.— A resident, and one of the commonest birds; seen almost constantly, sometimes singly, but more often in pairs and sometimes four and five. Its numbers decreased decidedly after the advent of cold weather, but it still remained common through the winter.

89. ***Vireo griseus griseus***. WHITE-EYED VIREO.— Never common and had already left before the last of August. Returned March 25 when three were collected and two more seen; all were in full loud song.

90. **Vireo belli belli.** BELL'S VIREO.— A single one collected September 8, was the only bird seen in the fall, and it had not yet come in the spring by April 4.

91. **Compsothlypis americana usneæ.** NORTHERN PARULA WARBLER.— Was not seen in the fall. The first arrived March 25.

92. **Dendroica coronata.** MYRTLE WARBLER.— The commonest warbler in fall, and the only one that remained throughout the winter. The first — a single bird — was seen November 16 along a small stream. Since the species was found very abundant the first time the heavy timber was visited November 29, it probably arrived in the woods somewhat earlier than it was noted on the prairie. The numbers had decreased decidedly by December 25, but still it remained fairly common all winter, though constantly lessening in abundance. It began the middle of March to return to the edges of the prairie, whence it had been driven to the bottom-land during the winter.

93. **Geothlypis trichas trichas.** MARYLAND YELLOW-THROAT.— Three birds seen in all, two September 9 and one the next day; it had not yet arrived the first of April.

94. **Anthus spraguei.** SPRAGUE'S PIPIT.— A flock of 40-50 birds was seen in an open field February 18 in company with Savannah Sparrows, Lapland and Chestnut-collared Longspurs. The next day none of these except the Savannah Sparrows could be found.

95. **Mimus polyglottos polyglottos.** MOCKINGBIRD.— A common breeder in town but by the first of September the birds had deserted their nesting sites and most of them must have migrated, for less than half a dozen were seen during the entire winter. The first full song was heard February 21, but the birds had not yet become common by the first of April.

96. **Toxostoma rufum.** BROWN THRASHER.— One bird on September 8, was the sum total of all seen in the fall. This seems a very early date for it to disappear since at this time it was still present in Minnesota, and it spends the whole winter only a few miles south of Caddo.

Two silent birds were the first arrivals March 8, which is fully as early as they would be expected to arrive, but no more had been seen to April 7, though by this date the species was far north of St. Louis. Evidently the Brown Thrasher was not a common bird at Caddo.

It seems a little strange that not a Catbird was seen at Caddo either in fall or spring.

97. **Thryothorus ludovicianus ludovicianus.** CAROLINA WREN.— Common resident; retiring and silent through the winter, but by February 23, its full spring song was heard almost continually, from various directions and by March 25 it was one of the most conspicuous and noisy inhabitants of the woods.

98. **Thryomanes bewicki cryptus.** TEXAS BEWICK'S WREN.— Not noted until November 8, but it may have been present all the fall in the bottomland; by November 25 had become quite common around town and remained so until about December 19. Then its numbers diminished,

but it was still present all winter. Began to sing February 16, and two days later was in full spring song. All disappeared after March 19, but the people of the town said they would return later and be the common House Wren of the summer.

99. ***Nannus hiemalis hiemalis***. WINTER WREN.— Rare both in the late fall after its arrival November 29, and through the winter until the last was noted March 25; never more than three birds seen in one day.

100. ***Certhia familiaris americana***. BROWN CREEPER.— Arrived the same day with the winter wren, November 29, and through the winter was scarcely more common, but on February 23 they suddenly appeared everywhere in the heavy timber along the Blue. The wave soon passed on and a few days later all had disappeared.

101. ***Sitta carolinensis carolinensis***. WHITE-BELLIED NUTHATCH.— Not noted until the bottomland was visited November 29, though it undoubtedly is resident. A dozen birds were seen and they remained in about the same numbers all winter. None were seen at any time away from the heavy timber. By February 23, they had become noisy, active, and conspicuous.

102. ***Bæolophus bicolor***. TUFTED TITMOUSE.— Had not been seen along the small streams during the early fall, but when the heavy timber of the Blue was entered November 29 it was found one of the most characteristic birds. At least a hundred were seen, confined entirely to the trees on the river's edge; not a titmouse was seen even a gunshot away from the stream. They were present in about the same numbers on January 12, but when the same woods were visited February 23, only a dozen were seen where there had been a hundred in November. This must have been merely temporary however, for in March they were just as common as ever, and in this latter month they left the shelter of the heavy timber and were found widely distributed. In November they were noisy, in January silent, and in March striving to relieve themselves of the surplus of noise they had accumulated through the winter.

103. ***Penthestes carolinensis agilis***. PLUMBEOUS CHICKADEE.— A common resident, numerous enough so that 30–40 would be seen in a day's walk. It was found for the most part in the heavy timber, but a few wandered into the fringes of small trees along the streams. It was in full song February 23.

104. ***Regulus satrapa satrapa***. GOLDEN-CROWNED KINGLET.— When the bottomlands were visited for the first time, November 29, it was already common, and had probably arrived a few days earlier; its numbers were unchanged January 12, but it must have left earlier than most of the winter residents, for when this same place was examined February 23, it had already disappeared.

105. ***Regulus calendula calendula***. RUBY-CROWNED KINGLET.— The first came November 7, but it was never common and the last was seen December 9 before real winter arrived. It returned March 25 and was abundant for a few days.

106. ***Poliophtila cærulea cærulea***. BLUE-GRAY GNATCATCHER.— Probably nested but was not noted until September 10; by that time most of the summer birds had gone, but a few lingered to November 6. No more were seen until, on March 25, they were so common that a full hundred were seen in a three mile walk. One bird was heard to give a long, and beautiful and perfect trill,— a note which was not heard again from a Blue-gray Gnatcatcher, until the spring of 1913 at Washington, D. C.

107. ***Hylocichla guttata pallasi***. HERMIT THRUSH.— Two seen November 29, the first day the bottomland was visited. It remained in small numbers through the winter and was last seen March 1, though most likely some birds remained to a later date.

108. ***Planesticus migratorius migratorius***. ROBIN.— A flock of fifty flying south at 4 P. M. November 3, was the first of the season; no more were seen until November 29, and then only a few. The number were never great but a few could be found almost any time, and they began to sing January 31. Several were seen February 23, while three days later the numbers had more than doubled. On March 5, a party of Robins was feeding on the ground, strangely enough every bird seen previous to that time had been perched on bush or tree. They were most common March 15, but left within the next ten days.

109. ***Sialia sialis sialis***. BLUEBIRD.— Not seen until September 8, though of course it had been present all the time, since it breeds at Caddo, where it is reported to nest in town early in the spring and then spend most of the rest of the year in the thick woods. To November 29 less than a dozen had been seen in all, but on that day they were found common in the heavy timber along the Blue, and they remained so all winter. They became decidedly less numerous after February 23, and none at all were seen during the last week in March.

110. ***Sialia currucoides***. MOUNTAIN BLUEBIRD.— Seen once during the fall.